Expanding existing harmful algal blooms surveillance systems: canine sentinel

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Introduction

There have been several episodes in the United States in the past several years in which dogs have died after having been exposed to cyanobacterial (blue green algae) blooms. Reports of their deaths preceded any reports of human illness related to exposure to these blooms. Investigations of these as well as other animal deaths have shown them to be related to exposure to cyanobacterial toxins in these blooms. Documented deaths have occurred in both domestic animals (pets and livestock) and in wildlife. Some of the factors that may account for the susceptibility of dogs to illness and death from cyanobacterial toxins may include increased exposure to bloom waters during the summer months and the size of the animals relative to the dose of toxin that they received. While the poisoning and death of these dogs is disheartening, the reporting of canine deaths associated with exposure to bloom waters serves as an important tool for preventing human exposure and for reducing further animal exposure to cyanobacterial toxins.

Hypothesis

The reporting of dead dogs will not detect potentially harmful algal blooms.

Methods

During the past year, the North Carolina Harmful Algal Blooms (HAB) and the Veterinary Public Health Programs coordinated a sentinel surveillance system to detect acute lethal poisonings of dogs. This program encourages practicing veterinarians to voluntarily report any deaths of dogs that they think might be related to exposure to blue green algae blooms. Veterinarians were notified of this program by use of an internet-based " Listserv" communication tool.

Results

Over 800 veterinarians were informed about the rationale for reporting dog deaths and they were provided with an educational flyer to further document and reinforce this message. No dogs deaths have been reported to date. One dead waterfowl incident was reported by a concerned citizen, but the presence of a harmful algal bloom or toxins was not determined.

Conclusions

At this time the HAB and Veterinary Public Health programs are planning to expand the Canine Sentinel Surveillance Program to include additional animals (livestock and wildlife), other state and local public health agencies, and to encourage other states to take part in this program. The North Carolina Cooperative Extension Program is one example of another governmental agency that is being encouraged to participate in this surveillance program. The Canine Sentinel Surveillance Program will be used to help detect occurrences of deaths in animals. This program should also reduce the number of animal poisonings due to algal toxins by increasing public awareness of this potential problem and through preventive measures to reduce the exposure of animals to algal toxins in public recreational waters of North Carolina. The increased public awareness may also reduce the potential for human exposure to algal toxins.